



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,822	02/25/2005	Kenichi Nagayama	US01-05003PCT	9165
21254 7590 09/19/2007 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER SANTIAGO, MARICELI	
			ART UNIT 2879	PAPER NUMBER
			MAIL DATE 09/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

TH

Office Action Summary

Application No.

10/525,822

Applicant(s)

NAGAYAMA ET AL.

Examiner

Mariceli Santiago

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/20/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The Amendment, filed on February 25, 2005, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-12 has been entered.

Claims 13-32 are pending in the instant application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites "wherein said leak prevention layer has electron transport abilities, and transports electrons from said cathode side to said anode side.", however, preceding claim 14, states that the leak prevention layer has hole transport abilities, it is unclear how the leak prevention layer can simultaneously have both hole and electron transport abilities. Furthermore, the specification fails to provide sufficient antecedent basis for this claimed embodiment. Claim 30 is dependent upon claim 16, thus is also considered indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2879

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-15, 17-22, 24-29, 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Roitman et al. (EP 1003229 A1).

Regarding claim 13, Roitman discloses an organic EL element comprising an anode (102), a cathode (108), and a light-emitting organic EL layer (109) sandwiched between the anode and the cathode, wherein the organic EL layer comprises a leak prevention layer (105, CSL) that takes on a high resistance when its temperature is increased (CSL layer is made of a positive temperature coefficient material, ¶[0027-0031]).

Regarding claim 14, Roitman discloses an organic EL element wherein said leak prevention layer has hole transport abilities, and transports holes from the anode side to the cathode side (¶[0032], the CSL layer effectively becomes the "anode" layer, thus has hole injection and transport capabilities).

Regarding claim 15, Roitman discloses an organic EL element wherein the leak prevention layer has electron transport abilities, and transports electrons from the cathode side to the anode side (¶[0038], the CSL layer effectively becomes the "cathode" layer, thus has electron injection and transport capabilities).

Regarding claims 17 and 18, Roitman discloses an organic EL element wherein the leak prevention layer is arranged in contact with the anode (¶[0032]).

Regarding claims 19 and 20, Roitman discloses an organic EL element wherein the leak prevention layer is arranged in contact with the cathode (¶[0038]).

Regarding claims 21-22, Roitman discloses an organic EL element wherein the leak prevention layer is made of a positive temperature coefficient material such as

Art Unit: 2879

barium titanate which has a Curie temperature of about 120°C¹, i.e., achieves high resistance at such temperature.

Regarding claim 24, Roitman discloses an organic EL element wherein when taking on a high resistance, the specific resistance of the leak prevention layer increases at least by a factor of 10 (property of the barium titanate material).

Regarding claim 25, Roitman discloses an organic EL element wherein when taking on a high resistance, the specific resistance of the leak prevention layer becomes at least 10¹¹Ωcm (property of the barium titanate material).

Regarding claim 26, Roitman discloses an organic EL element wherein the leak prevention layer comprises a conductive polymer (PANI) that is doped with an acid (¶[0031]).

Regarding claim 27, it is noticed that the recitation “wherein said leak prevention layer is made by a wet film formation process or a vapor-phase film formation process” is directed to a the method of manufacturing, in view of an absent of a showing that the method imparts distinctive structural characteristics to the final product, the limitations directed to the method of manufacturing are not germane to the issue of patentability of the device.

Regarding claim 28, 29, 31 and 32, Roitman discloses an organic EL element wherein the leak prevention layer is made of a positive temperature coefficient material such as barium titanate which has a Curie temperature of about 120°C, i.e., achieves high resistance at such temperature.

¹ http://www.atceramics.com/pdf/technotes/dielectric_aging.pdf

Art Unit: 2879

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roitman et al. (EP 1003229 A1).

Regarding claim 23, Roitman fails to exemplify the limitation of the leak prevention layer takes on a high resistance at temperatures of 200 to 300°C. Roitman further discloses wherein the barium titanate ceramic can be formulated in composite structures with polymer or photoresist matrices to achieve the desired current self-limiting behavior ([0028]). Furthermore, it is conventionally recognized that changing the Curie temperature of barium titanate can be achieved by doping or mixing the ceramic material. Accordingly, it is considered within the capabilities of one skilled in the art to "doped" or mix the barium titanate in order to achieve a desired resistance temperature as an obvious matter of design engineering. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to dope or mix the barium titanate ceramic material to achieve high resistance at temperatures of 200 to 300°C, as an obvious matter of design engineering since such modification is considered within the capabilities of one skilled in the art.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-

Art Unit: 2879

2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Marceli Santiago
Primary Examiner
Art Unit 2879